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Cognitive dysfunction rehabilitation using MentalPlus® digital game: A possible future tool to cognitive rehabilitation in POCD

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Background & Objective: POCD remains a common postoperative complication associated with higher morbidity and mortality, especially in elderly patients and cardiac surgery. Research on digital games may not relate directly to postoperative cognitive dysfunction, but it can illuminate the possibilities of games related cognitive improvement in people with cognitive dysfunction. MentalPlus® is a digital game developed first to evaluate the cognitive dysfunction, in special POCD. This study investigated the association between the use of MentalPlus® game series of sessions in cardiac surgery patients with cognitive dysfunction and their results after them. Based on these findings, the scientific community could have interest to develop a major project to evaluate the impact of its usefulness for POCD rehabilitation.

Materials & Methods: A total of 17 volunteer's cardiac surgery patients, mean age of 64 years, with diagnosed cognitive dysfunction based on usual neuropsychological test battery went through 10 MentalPlus® game sessions. The battery was composed of: telephone interview cognitive status (TICS), verbal learning test (VLT), color reading effect (STROOP) and trail making test (TMT A/B). MentalPlus® game sessions focused on attention, memory and executive functions. Patient's cognitive functions were evaluated in two moments: Before the first and after the last session use. Each session consisted of 25 minutes each play per day. The primary outcome was an evaluation of each battery test score before and after 10 MentalPlus® game sessions.

Results: Due to the small sample size, we present only descriptive data. The results disclosed improvement in diverse neuropsychological tests applied after ten MentalPlus® game sessions rehabilitation.

Conclusion: These positive pilot results in cognitive rehabilitation using MentalPlus® game can suggest a possibility for future use in POCD rehabilitation.

Biography

Livia Stocco Sanches Valentin has completed her PhD from University of São Paulo School of Medicine-FMUSP and Post-doctoral studies from Harvard Medical School; David Geffen School of Medicine at UCLA; Cleveland Clinic Lerner College of Medicine of Case Western University; University of Copenhagen; Utrecht University; Max Planck Institute and Karolinska Institute as a multicenter study. She is the Principal Investigator of the RCT Evaluation of POCD through the MentalPlus® digital game. She has published papers in Anesthesia and Neuropsychology journals and has been serving as an Editorial Board Member of many journals and Reviewer of journal about Anesthesiology and Neuroscience.

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